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**JOHOR  
INNOVATION  
INVENTION  
COMPETITION  
AND  
SYMPOSIUM  
2023**



" Innovation Inspires a Society  
to be Critical and Creative"

# **JOHOR INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2023**



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Critical and Creative"

**Editors-in-Chief**

**AHMAD KHUDZAIRI KHALID  
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## **Preface**

**In the name of Allah, the Almighty who gives us the enlightenment, the truth, the knowledge and with regards to Prophet Muhammad (peace be upon him) for guiding us to the straight path. We thank to Allah for giving us guidance and strength to write this e-book.**

**This e-book compiles the extended abstracts that submitted to Johor Innovation Invention Competition and Symposium 2023 (JIICaS2023), where JIICaS2023 is a virtual platform for all creative minds to share and present their invention and innovation. The extended abstracts are divided into two categories, which are Category A (Higher Educational Student/ Any Recognized Institutional Students in Malaysia) and Category B (Primary/ Secondary School Students / Special Education School Students in Johor). Each abstract gives a brief background on the innovation or project.**

**We hope that this e-book will help the readers to get to know the innovation done by the students from both categories and get some ideas to develop future innovation products.**



## G.U.S.T SURVIVAL KIT

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### ABSTRACT

In the case of natural disaster occurrence, there is a dire need for electricity. In such events, the duration is uncertain and energy supply from batteries may run out. Hence, having renewable and clean energy is the utmost priority. Therefore, the Generator Utility Support Tech (G.U.S.T) survival kit is proposed as a viable solution. The G.U.S.T Survival Kit is focused on exploring and harnessing the potential of both solar and wind energy as a sustainable and renewable source for backup power supply to survive catastrophic events. The proposed innovation will emphasize the importance of sustainable practices and environmental conservation. In line with the 7<sup>th</sup> sustainable development goal, this project focuses on the use of wind energy as a renewable source and aims to contribute to the global shift towards sustainable energy sources, mitigating natural disaster impacts and promoting a greener and more sustainable future. In addition, G.U.S.T Survival Kit is designed to be compact, lightweight, and portable, making them suitable for various emergency situations or outdoor adventures. They can be easily transported and set up in different locations, ensuring a consistent and reliable source of clean energy. In sum, the G.U.S.T Survival Kit has the potential to increase the chances of survivability in dire situations by providing emergency power supply and is suitable for the use of public and rescue units.

**Keywords:** natural disaster, emergency power supply, renewable energy, environmental sustainability.

### 1.0 INTRODUCTION

During times of natural disasters, backup power supply becomes a vital asset to support critical infrastructure and services. Sustainable backup power supply helps to reduce the time it takes for first responders to begin recovery efforts. Therefore, the G.U.S.T Survival Kit is proposed as an innovative solution for backup power supply device whilst providing the essential needs to survive devastating events. G.U.S.T Survival Kit focuses on exploring and harnessing the potential of both solar and wind energy as a sustainable and renewable source for backup power supply thus emphasizing the importance of sustainable practices and environmental preservation. By focusing on wind energy as a renewable source, the proposed G.U.S.T Survival Kit aims to contribute to the global shift towards sustainable energy sources, mitigating natural disaster impacts and promoting a greener and more sustainable future.

### 2.0 OBJECTIVE

The objectives of proposing the G.U.S.T Survival Kit is to increase the chances of human survivability during natural disasters by providing a portable backup survival kit that could be easily transported and set up in different locations, ensuring a consistent and reliable source

of clean energy. By utilizing both solar and wind power, the survival kit promotes environmental sustainability and helps mitigate the impacts of climate change.

### 3.0 DESCRIPTION OF THE PROPOSED INNOVATION/METHODOLOGY

The G.U.S.T Survival Kit is designed using the AutoCAD software. The following are the special features of the proposed G.U.S.T Survival Kit:

- Utilizes wind energy whereby the perpetual motion of a fan connected to a motor converts mechanical energy into electrical energy.
- Contains solar panels that could help to collect energy from the sun in the form of sunlight and convert it into electricity that can be used as a backup power supply.
- Compact design, easy for storage and portable.
- Firm structure, designed to withstand external forces.
- Having a sealant to fill the gaps at the charge port and overall product structure making it waterproof.
- Abundant of utilities for survival
  - a. 3w flashlight torch
  - b. Multifunctional pocketknife
  - c. 5000mah built in power bank.
  - d. Mini first aid kit
  - e. Emergency whistle
  - f. Built in distress signal transmitter.

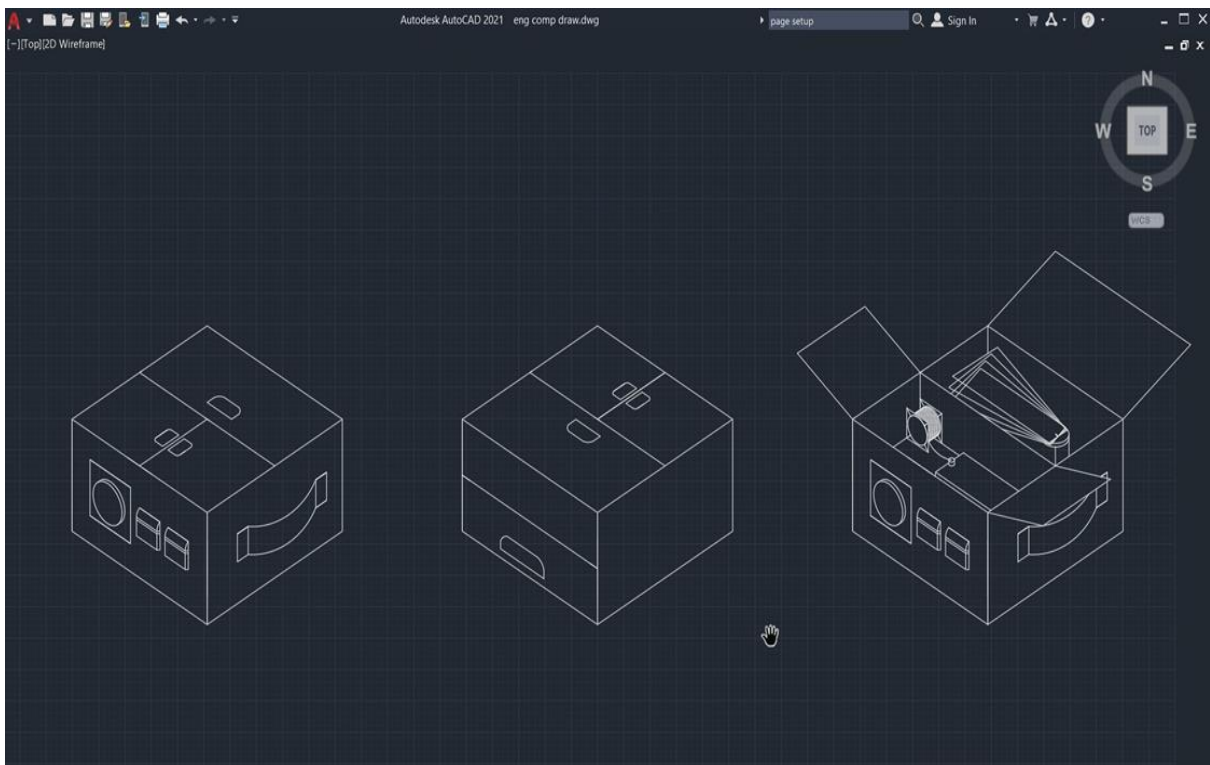


Figure 1: Visual Sketch Of G.U.S.T Survival Kit Using AutoCAD Software

#### **4.0 ADVANTAGES//IMPACT/RESULTS/NOVELTY**

The proposed G.U.S.T Survival Kit offers numerous advantages. The following are the advantages:

- Increase the chances of survivability in dire situations.
- Able to provide power supply which is scarce in an event of catastrophe.
- The product is to be used by the public and rescue units.
- Ideal to be placed in every home, schools, hospitals, offices etc.
- Instant alert to nearest rescue units via GPS when activated.
- Suitable charging port for both Android and Apple phones.
- Adhering to the principle of SDG 7 which is having access to affordable, reliable, sustainable, and modern energy for all whilst maintaining its objective to become a survival kit.

#### **5.0 CONCLUSION**

In conclusion, harnessing wind as a clean energy source for a survival kit is an innovative and practical solution that can have significant benefits. Thus, the G.U.S.T Survival Kit innovation idea is related to SDG 7 which is affordable and clean energy. SDG 7 is about ensuring access to affordable, reliable, sustainable, and modern energy for all, while promoting renewable energy sources and energy efficiency. By integrating wind power into a survival kit, individuals and communities can ensure access to clean and renewable energy even in remote or disaster-prone areas.